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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,484	06/01/2000	Bradley W. Smith	AAI-14085	8297

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EXAMINER	
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ART UNIT	PAPER NUMBER
3611	

DATE MAILED: 05/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/586,484	SMITH, BRADLEY W.	
	Examiner	Art Unit	
	Ms. Lee S. Lum	3611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2004* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-9,11-19 and 21-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8,9 and 27* is/are allowed.

6)☒ Claim(s) *2-7,11-19 and 21-26* is/are rejected.

7)☒ Claim(s) *28 and 29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. An Amendment was filed 3/1/04 in which Claims 27-29 were also added.

2. The disclosure is objected to because the following elements lack antecedent basis:
In Claim 16, line 3 – length,
In Claim 27 – first,
In Claim 29, line 1 - discharge treatment element.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A. **Claim 7** is rejected under 35 U.S.C. 102(b) as being anticipated by Einsiedel et al 6164688.

Einsiedel discloses an inflator comprising
Elongated arcuate tube 12 containing elongated supply 11 of pyrotechnic gas generant material,
The tube having a length-to-diameter ratio greater than 20 (fig 1),
and including gas exits.

B. **Claims 16, 17 and 19** are rejected under 35 U.S.C. 102(b) as being anticipated by Hamilton 6145876.

Hamilton discloses an inflation assembly comprising

Elongated inflator comprising elongated hollow tube with elongated supply of pyrotechnic gas generant material 28 (col 5, lines 10-11),

Elongated discharge treatment element secured with the inflator at selected positions along the latter's length (fig 2, at ends),

to treat at least a portion of the discharged gas, and, to deform to create spaced-apart flow paths along the length of the inflator, and the length of the treatment element, respectively, as depicted in figs 6A-D, and,

the inflator contained within inflatable curtain airbag 110 (figs 7/8).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

A. **Claims 11-15, 18, 21 and 23-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton 6145876 in view of Einsiedel.

Re **Claims 11 and 13-15**, Hamilton discloses inflator assembly 20 comprising

Inflator comprising elongated hollow tube 52 with elongated supply of pyrotechnic gas generant material 28 (col 5, lines 10-11,

The tube including gas exits 56,

Elongated diffuser/deformable discharge treatment element 96, secured with the tube at selected positions (fig 2, at ends of the inflator),

to treat at least a portion of the discharged gas, and, to deform to create spaced-apart flow paths along the length of the inflator, and the length of the treatment element, respectively, as depicted in figs 6A-D, and,

Filter 64 (fig 4, and col 12, lines 46-50),

Inflatable curtain airbag 110 communicating with the inflator, the latter contained within the former (figs 7/8).

The reference does not specify the tube as having a length-to-diameter ratio greater than 20, while Einsiedel suggests this ratio in fig 1. Although this characteristic does not affect the function/operation of the invention, it would have been obvious to one with ordinary skill in the art at the time the invention was made to include this ratio, as exemplified in Einsiedel, to suggest the scope of applicability. It is obvious that this feature is application-dependent.

Re **Claims 12, 18 and 25**, Hamilton does not disclose the tube as being arcuate, while Einsiedel shows this element 12. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this configuration, as shown in Einsiedel, to conform to the particular roof/vehicle, thus increasing applicability and aesthetic considerations.

Re **Claims 21, 23 and 24**, the references also disclose a method of inflating an inflatable device, the steps derived from the structure and means previously described.

With respect to Claim 24, it would have been obvious to one with ordinary skill in the art at the time the invention was made to include bending the tube to conform to a particular site in the vehicle.

B. **Claims 2 and 4** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton in view of Einsiedel, and in further view of Walker et al 5845933.

Re **Claim 2**, the previous references do not disclose at least a portion of the gas generant material as including cylindrical grains, while Walker shows the gas generant as comprising cylindrical annular-shaped grains axially aligned end-to-end, in Fig 1 with grains 56. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this material, as shown in Walker, as one type of gas generant material for certain inflators requiring this arrangement of gas generant, and so as to provide a more reliable inflator. This type of gas generant is one of various types well-known in the art.

Re **Claim 4**, the previous references do not include an elongated igniter extending within an cavity formed by annular-shaped grains, while Walker shows the inflator as comprising an elongated igniter 26, and fuse (Col 9, lines 29-31), extending within internal cavity 24. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this material, as shown in Walker, for even (and time-dependent) ignition of the gas generant material, thus increasing optimal performance.

C. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton in view of Einsiedel and Walker, and in further view of Sheng 6068290.

The previous references do not disclose an ignition-enhancing material coated on the inner surfaces of the grains, while Sheng shows this feature in col 3, last paragraph. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include an accelerator on the grains, as shown in Sheng, as another gas generant for specific ignition characteristics.

D. **Claims 5 and 6** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton in view of Einsiedel, and in further view of Armstrong III et al 5551724.

The previous references do not disclose a diffuser comprising an expanded metal, while Armstrong shows this element in fig 4, and col 11, first four complete paragraphs. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include this element, as shown in Armstrong, in order to direct the outgoing gas towards the airbag, and treat it for particulates/undesired materials.

E. **Claims 22 and 26** are rejected under 35 U.S.C. 103(a) as being unpatentable over Hamilton in view of Einsiedel, and in further view of Wilhelm 4158696.

The previous references do not disclose that the gas generant reacts substantially simultaneously, while Wilhelm shows this characteristic in Col 3, last line, to the next column. It would have been obvious to one with ordinary skill in the art at the time the invention was made to include a material which can be ignited substantially simultaneously, as shown in Wilhelm, so to minimize the reaction time in which the airbag is inflated, for certain applications.

5. ALLOWABLE SUBJECT MATTER

a. **Claims 28 and 29** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

b. **Claims 8, 9 and 27** are allowable.

Prior art does not disclose an inflator assembly comprising, *inter alia*, the inflator comprising an elongated tube with gas generant material, the tube having a length-to-diameter ratio of greater than 20, and an elongate diffuser secured adjacent the inflator, and having two opposed lateral ends.

6. RESPONSE TO REMARKS

Examiner has provided a new combination of references, Hamilton and Einsiedel, where the latter provides the limitation "length-to-diameter ratio greater than 20" for the tubular member.

The remaining combinations with Walker, Sheng, etc, are maintained because they disclose the recited elements/characteristics.

Applicant is asked to note allowable subject matter.

7. The prior art made of record, and not relied upon, is considered pertinent to the disclosure: Bailey et al 6073961.

8. Communication with the Examiner and USPTO

Any inquiry concerning this communication should be directed to Ms. Lum at (703) 305-0232, 9-530, M-F. Our fax number is (703) 872-9306. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to customer assistance at (703) 306-5771.

Ms. Lee S. Lum, Examiner
5/10/04

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